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## RAW SEQUENCE LISTING

DATE: 03/18/2002

PATENT APPLICATION: US/09/880,729A

TIME: 15:09:57

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\03182002\I880729A.raw

2 <110> APPLICANT: DIVERSA CORPORATION  
 3 SHORT, Jay M.  
 4 MATHUR, Eric J.  
 5 LAM, David E.  
 7 <120> TITLE OF INVENTION: ENZYMES HAVING CARBOXYMETHYL CELLULASE ACTIVITY AND METHODS  
 OF USE  
 8 THEREOF  
 10 <130> FILE REFERENCE: DIVER1110-4  
 12 <140> CURRENT APPLICATION NUMBER: US 09/880,729A  
 C--> 13 <141> CURRENT FILING DATE: 2002-03-05  
 15 <150> PRIOR APPLICATION NUMBER: US 09/472,857  
 16 <151> PRIOR FILING DATE: 1999-12-27  
 18 <150> PRIOR APPLICATION NUMBER: US 08/951,889  
 19 <151> PRIOR FILING DATE: 1997-10-16  
 21 <150> PRIOR APPLICATION NUMBER: US 08/518,615  
 22 <151> PRIOR FILING DATE: 1995-08-23  
 24 <160> NUMBER OF SEQ ID NOS: 4  
 26 <170> SOFTWARE: PatentIn version 3.1  
 28 <210> SEQ ID NO: 1  
 29 <211> LENGTH: 954  
 30 <212> TYPE: DNA  
 31 <213> ORGANISM: Unknown  
 33 <220> FEATURE:  
 34 <223> OTHER INFORMATION: Isolated nucleic acid sequence  
 36 <400> SEQUENCE: 1  
 37 atgggtgttg atccttttga aaggaacaaa atattgggaa gaggcattaa tataggaaat 60  
 39 gcgcttgaag caccaaatga gggagactgg ggagtgggtga taaaagatga gttcttcgac 120  
 41 attataaaag aagccggttt ctctcatggt cgaattccaa taagatggag tacgcacgct 180  
 43 tacgcgtttc ctctttataa aatcatggat cgcttcttca aaagagtgga tgaagtgata 240  
 45 aacggagccc tgaaaagagg actggctggt gctataaata ttcatacta cgaggagtta 300  
 47 atgaatgatc cagaagaaca caaggaaaga tttcttgctc tttggaaaca aattgctgat 360  
 49 cgttataaag actatcccga aactctatatt tttgaaattc tgaatgaacc tcacggaaat 420  
 51 ctactccgg aaaaatggaa tgaactgctt gaggaagctc taaaagttat aagatcaatt 480  
 53 gacaaaaagc acactataat tataggcaca gctgaatggg ggggtatatc tgcccttgaa 540  
 55 aaactgtctg tcccaaaatg ggaaaaaaat tctatagtta caattcacta ctacaatcct 600  
 57 ttcgaaattta cccatcaagg agctgagtggt gtggaaggat ctgagaaatg gttgggaaga 660  
 59 aagtggggat ctccagatga tcagaaacat ttgatagaag aattcaattt tatagaagaa 720  
 61 tgggtcaaaaa agaacaaaag accaattttac atagggtgagt ttggtgccta cagaaaagct 780  
 63 gaccttgaat caagaataaa atggacctcc tttgtcggtc gcgaaatgga gaaaaggaga 840  
 65 tggagctggg catactggga attttgttcc ggttttggtg tttatgatac tctgagaaaa 900  
 67 acctggaata aagatctttt agaagcttta ataggaggag atagcattga ataa 954  
 70 <210> SEQ ID NO: 2  
 71 <211> LENGTH: 317  
 72 <212> TYPE: PRT

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73 &lt;213&gt; ORGANISM: Unknown

75 &lt;220&gt; FEATURE:

76 &lt;223&gt; OTHER INFORMATION: Deduced amino acid sequence encoded by SEQ ID NO:1

78 &lt;400&gt; SEQUENCE: 2

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80 Met Gly Val Asp Pro Phe Glu Arg Asn Lys Ile Leu Gly Arg Gly Ile
81 1          5          10          15
84 Asn Ile Gly Asn Ala Leu Glu Ala Pro Asn Glu Gly Asp Trp Gly Val
85          20          25          30
88 Val Ile Lys Asp Glu Phe Phe Asp Ile Ile Lys Glu Ala Gly Phe Ser
89          35          40          45
92 His Val Arg Ile Pro Ile Arg Trp Ser Thr His Ala Tyr Ala Phe Pro
93          50          55          60
96 Pro Tyr Lys Ile Met Asp Arg Phe Phe Lys Arg Val Asp Glu Val Ile
97 65          70          75          80
100 Asn Gly Ala Leu Lys Arg Gly Leu Ala Val Ala Ile Asn Ile His His
101          85          90          95
104 Tyr Glu Glu Leu Met Asn Asp Pro Glu Glu His Lys Glu Arg Phe Leu
105          100          105          110
108 Ala Leu Trp Lys Gln Ile Ala Asp Arg Tyr Lys Asp Tyr Pro Glu Thr
109          115          120          125
112 Leu Phe Phe Glu Ile Leu Asn Glu Pro His Gly Asn Leu Thr Pro Glu
113          130          135          140
116 Lys Trp Asn Glu Leu Leu Glu Glu Ala Leu Lys Val Ile Arg Ser Ile
117 145          150          155          160
120 Asp Lys Lys His Thr Ile Ile Ile Gly Thr Ala Glu Trp Gly Gly Ile
121          165          170          175
124 Ser Ala Leu Glu Lys Leu Ser Val Pro Lys Trp Glu Lys Asn Ser Ile
125          180          185          190
128 Val Thr Ile His Tyr Tyr Asn Pro Phe Glu Phe Thr His Gln Gly Ala
129          195          200          205
132 Glu Trp Val Glu Gly Ser Glu Lys Trp Leu Gly Arg Lys Trp Gly Ser
133          210          215          220
136 Pro Asp Asp Gln Lys His Leu Ile Glu Glu Phe Asn Phe Ile Glu Glu
137 225          230          235          240
140 Trp Ser Lys Lys Asn Lys Arg Pro Ile Tyr Ile Gly Glu Phe Gly Ala
141          245          250          255
144 Tyr Arg Lys Ala Asp Leu Glu Ser Arg Ile Lys Trp Thr Ser Phe Val
145          260          265          270
148 Val Arg Glu Met Glu Lys Arg Arg Trp Ser Trp Ala Tyr Trp Glu Phe
149          275          280          285
152 Cys Ser Gly Phe Gly Val Tyr Asp Thr Leu Arg Lys Thr Trp Asn Lys
153          290          295          300
156 Asp Leu Leu Glu Ala Leu Ile Gly Gly Asp Ser Ile Glu
157 305          310          315

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160 &lt;210&gt; SEQ ID NO: 3

161 &lt;211&gt; LENGTH: 51

162 &lt;212&gt; TYPE: DNA

163 &lt;213&gt; ORGANISM: Artificial sequence

165 &lt;220&gt; FEATURE:

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Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\03182002\I880729A.raw

166 <223> OTHER INFORMATION: PCR primer  
168 <400> SEQUENCE: 3  
169 ttattgcggc cgcttaagga ggaaaaaatt atgggtgttg atccttttga a 51  
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173 <211> LENGTH: 33  
174 <212> TYPE: DNA  
175 <213> ORGANISM: Artificial sequence  
177 <220> FEATURE:  
178 <223> OTHER INFORMATION: PCR primer  
180 <400> SEQUENCE: 4  
181 ttattggatc cgaagggtga aaccacgccca tct 33

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VERIFICATION SUMMARY

DATE: 03/18/2002

PATENT APPLICATION: US/09/880,729A

TIME: 15:09:58

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\03182002\I880729A.raw

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date

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